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Henry T. Brendzel
P.O. Box 574
Springfield, NJ 07081

EXAMINER

THOMSON, WILLIAM D

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,322

Applicant(s)

GUNLUK ET AL.

Examiner

William D. Thomson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-10 have been presented for reconsideration in view of Applicants amendments and arguments. The Prior Art rejections of Claims 1-10 have been reconsidered and upheld.

Response to Arguments

2. Applicant's arguments submitted on 10/28/2004 have been fully considered. The Examiner's response is as follows.

2.1 Regarding the Applicant's response to the 35 U.S.C. 112 rejections of Claims 1-10 in the First Office Action.

The Examiner thanks the Applicant for the instant amendment to the claims, specifically to **Claim 1** and **Claim 10** and withdraws the earlier 35 U.S.C. 112 rejections of those claims.

2.2 Regarding the Applicants response to the 35 U.S.C. 102 rejections of Claims 1-10 in the First Office Action.

Applicant argued, (*page 6 of the 10/28/2004 response*)

In contradistinction, claim 1 defines a method where the first step specifies a step of identifying a set of feasible rings of the network. That is, even before the loading on the Network is considered, a set of feasible rings is identified. No such step is executed in the '367 reference method.

The Examiner respectfully traverses Applicants argument. The Examiner notes that in the cited reference the following is disclosed, "*Finally, the optimal traffic iteration decides how the point-to-point demand should best be routed among established rings. (Col. 8 Lines 12-2, Cox, Jr. et al. U.S. Patent 5,515,367)*". It would be *inherent* that for the planning system in the *Cox et al.* reference to function correctly, that the set of feasible rings would have

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to be identified in order to decide how the point-to-point demand should best be routed, *See Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 51 USPQ2d 1943 (Fed. Cir. 1999).

Applicant further argued, (page 7 of the 10/28/2004 response)

The second step of claim 1 specifies a process for identifying a routing that minimizes "both the number of traffic demands that are not routed and an overall routing metric." The Examiner asserts that this step is disclosed in col. 8, lines 31 et seq. Applicants respectfully disagree. The expression that is minimized in the '367 reference is found at col. 9, lines 42-44 minimizes a sum that involves a discounted fixed cost of ADMs (a_{jk}) discounted optical inter-ring traffic cost of (b_{jk}) and discounted optical inter-ring traffic costs (b_{jk}). Clearly, that is not a minimization of the number of traffic demands that are not routed.

The Examiner respectfully traverses the Applicant's arguments, it is noted that in Col. 8 lines 60-62, "*The other components are added based on how much traffic that needs to be added or dropped from the ADM.*" The Examiner asserts that dropped traffic is functionally equivalent to traffic demands that are not routed, i.e. dropped. Therefore the Claimed limitation as argued by the Applicant is disclosed in the *Cox Jr. et al.* reference.

Applicant further argued, (page 7 of the 10/28/2004 response)

The third step of claim 1 specifies identifying a set of rings from among the set of feasible rings that was identified in the first step. Since the set of feasible rings was not identified, it follows that the third step is not executed. Additionally, as indicated above, the '367 reference method does not identify a set of rings that minimizes a ring assignments cost measure that includes a cost associated with not covering the routed demand rings.

The Examiner respectfully traverses the Applicant's argument. It is noted by the Examiner that in Col. 7 Lines 23-30, "*As those skilled in the art will recognize, each node on the unidirectional path switched ring of FIG. 6 provides add/drop functionality. Unlike the linear add/drop network of FIG. 5, the path-switched ring does not require directional provisioning, since each circuit on the ring is carried all the way around the ring in both directions where it*

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enters and leaves the ring.” Further in col. 7 lines 31-48 is described the *self-healing*” capability of the fiber rings. The Examiner notes that the use of FDDI fiber rings, which must detect and identify *feasible* rings for use in a SONET ring, is well known in the art. As disclosed by the *Cox Jr. et al.* reference, those skilled in the *FDDI*, networking art, understand, that for purposes of having a robust high-speed fiber optic network, it is *inherent* that all loops in the network will be identified and all *sets* of rings in such a network are identified, the Examiner also directs the Applicant to Col. 11 Lines 29-37. As regards the limitation of teaching ring assignment costs please see Col. 11 Lines 38-52.

Applicant further argued, (*page 7 of the 10/28/2004 response and in regards to Claim 2*)

The cited text does not speak of “fixed ring capacity,” and indeed at Col. 9 Line 65 there is an expression, which limits the number of nodes in a ring to a specified ring size. However, claim 2 specifies that the constraint specified in claim1 requires “a feasible ring to have not more than a given number of nodes, and having a mileage cost that is not more than a given mileage cost, “(emphasis supplied). It is respectfully submitted that the limitation expressed in the bold letters is not described or suggested by the ‘367 reference and, therefore, claim 2 is not anticipated by the ‘367 reference independently of the fact that it depends on claim1.

The Examiner respectfully traverses Applicant’s argument. Please see Col. 11 Lines 29-37, and specifically line 36 where the term “*fixed ring capacity*” is disclosed.

As regards the Applicant’s arguments regarding claim 5, the Examiner respectfully traverses these arguments and maintains that the *Cox Jr. et al.* reference discloses either the exact limitations or the functional equivalent of those limitations claimed.

The Examiner has found Applicant’s arguments to be unpersuasive and upholds the earlier 35 U.S.C. 102 rejections of Claims 1-10.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-10** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cox, Jr. et al. (367).

3.1 Taking **claim 1**, for example, Cox, Jr. et al. (367) teaches A method carried out in a computer for provisioning rings in a ring-based network having a given topology of nodes and logical links that interconnected said nodes, and a set of traffic demands that is desired for said network to carry comprising the steps of (See Abstract, figures 9, 10, and 11, col. 4, lines 23 et seq.) executing a process that identifies a set of feasible rings in said network, which is a subset of all possible rings in said network that satisfy a given constraint; (col. 6, lines 25 et seq., col. 7, lines 49 et seq.) executing a process of identifying a routing for the traffic demands in said set of traffic demands, while aiming to minimize both number of traffic demands that are not routed and an overall routing metric, where the routing metric is a cost measure that is associated with using one of said logical links in a routing path of a demand;(col. 8, lines 31 et seq.) identifying a set of rings from among a set of feasible rings that minimizes a ring assignments cost measure that includes a cost associated with not covering routed demands with rings and a cost associated with using rings to cover demands; and (col. 8, lines 53 et seq, and col. 11, lines 38 et seq..) outputting the set of rings developed by said step of identifying for provisioning said nodes of said network.(col. 11, lines 8 et seq.)

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3.2 As to **claim 2**, the method of claim 2 where said constraint requires a feasible ring to have not more than a given number of nodes, and have a mileage cost that is not more than a given mileage cost is taught in Cox et al. at **col. 11, lines 29 et seq.**

3.3 As to **claim 3**, the method of claim 1 further comprising the step of provisioning said nodes of said network in accordance with said set of rings developed by said step of identifying is taught in Cox et al. at **col. 11, lines 29 et seq.**

3.4 As to **claim 4**, the method of claim 3 where said provisioning is accomplished through electronic transmission of information from said computer to said nodes of said network is taught in **Cox et al. at col. 11, lines 29 et seq.**

3.5 As to **claim 5**, the method of claim 1 where said process of identifying a routing for the traffic demands:

(a) considers a routing path for each of said demands, starting with the demand having a lowest routing path cost, based on a table that identifies a path having a lowest routing path cost for each arbitrary pair of nodes of said network;

(b) assigning a demand to said path having said lowest routing path cost, if capacity exists on said path having said lowest routing path cost;

(c) assigning said demand to a path having a higher routing path cost if capacity does not exist on said path having said lowest routing path cost; and

(d) leaves said demand un-routed if capacity does not exist on any path that can carry said demand, thereby obtaining an identified routing of said demands is taught in Cox et al. at **col. 9, lines 20 et seq., and col. 12, lines 14 et seq.**

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3.6 As to **claim 6**, the method of claim 1 where said process of identifying a routing for the traffic demands employs a shortest routing path metric is taught in Cox et al. at **col. 9, lines 20 et seq., col. 11, lines 17 et seq., and col. 12, lines 14 et seq.**

3.7 As to **claim 7**, the method of claim 1 where said process of identifying a routing for the traffic demands identifies a set of demand routings A by:

- (a) considering a routing path for each of said demands, starting with the demand having a lowest routing path cost, based on a table that identifies a path having a lowest routing path cost for each arbitrary pair of nodes of said network;
- (b) assigning a demand to said path having said lowest routing path cost, if capacity exists on said path having said lowest routing path cost;
- (c) assigning said demand to a path having a higher routing path cost if capacity does not exist on said path having said lowest routing path cost;
- (d) leaving said demand un-routed if capacity does not exist on any path that can carry said demand, thereby obtaining a first identified routing of said demands, B;
- (e) changing order in which said demands are considered and repeating steps (b), (c), and (d) to result in a second identified routing of said demands, C; and
- (f) assigning $A=B$ when number of un-routed demands in B is less than number of un-routed demands in C, and $A=C$ when number of un-routed demands in B is not less than number of un-routed demands in C is taught in Cox et al. at **col. 9, lines 20 et seq., and col. 12, lines 14 et seq.**

3.8 As to **claim 8**, the method of claim 7 where said table is pre-computed is taught in Cox et al. as the demand matrix and associated planner as shown in Figure 11 and discussed, for example in **col. 11, lines 1 et seq., col. 9, lines 20 et seq., and col. 12, lines 14 et seq.**

3.9 As to **claim 9**, the method of claim 1 where said step of identifying a set of rings employs an integer linear programming module to obtain said set of rings that minimizes said ring assignments cost function is taught in **Cox et al. at col. 9, lines 20 et seq., and col. 12, lines 14 et seq.**

3.10 As to the formula as recited in claim 10, Cox, Jr. et al teaches the equivalent relationships for assignments of cost at Cox et al. at **col. 9, lines 20 et seq., and col. 12, lines 14 et seq.**

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. The prior art made of record on the P.T.O. 892 has not been relied upon and is considered pertinent to applicant's disclosure. Careful consideration of the cited art is required prior to responding this Office Action, see 37 C.F.R. 1.111 (c).

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CONTACT INFORMATION

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William D. Thomson whose telephone number is 703-305-0022.

The examiner can normally be reached on 8:30-3:30 Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703-305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William Thomson

A.U. 2123

Primary Examiner

June 24, 2004


JEAN F. HOMERE
PRIMARY EXAMINER